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P H I L O S O P H I C A L
T R A N S A C T I O N S.

XXVI. *An Account of the Island of St. Miguel. By Mr. Francis Maffon, in a Letter to Mr. William Aiton, Botanical Gardener to His Majesty. Communicated by Joseph Banks, Esq. F. R. S.*

S I R,

St. Miguel,
August 10, 1777.

Read April 2,
1778.

I HAVE visited the greatest parts of this island, and find that its productions differ greatly from those of Madeira, insomuch that none of the trees of the latter are found here, except the *faya*: it

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has a nearer affinity to Europe than Africa. The mountains are covered with the *erica vulgaris*, and an elegant ever-green shrub very like a *phillyrea*, which gives them a most beautiful appearance. Notwithstanding this island has been frequently visited by Europeans, I cannot help communicating to you a few of its singularities.

It is one of the principal and most fertile of the Azorian islands lying nearly East to West; its length is about eighteen or twenty leagues; its breadth unequal, not exceeding five leagues, and in some places not more than two. It contains about eighty thousand inhabitants.

Its capital the city of Ponta del Guda, which contains about twelve thousand inhabitants, is situated on the South-side of the island, on a fine fertile, plain country, pretty regularly built; the streets strait, and of a good breadth. It is supplied with good water, which is brought about the distance of three leagues from the neighbouring mountains. The churches and other religious edifices are elegant and well built for such an island. There is a large convent of Franciscan friars and one of the order of St. Augustin, four convents for professed nuns, and three Recolhimentos for young women and widows who are not professed. The vessels anchor in an open road; but it is not dangerous, as no wind

wind can prevent their going to sea in case of stormy weather.

The country round the city is plain for several miles, well cultivated, and laid out with good taste into spacious fields, which are sown with wheat, barley, Indian corn, pulse, &c. and commonly produce annually two crops; for as soon as one is taken off, another is immediately sown in its place. The soil is remarkably gentle and easy to work, being for the most part composed of pulverized pumice stone. There are in the plains a number of pleasant country seats, with orchards of orange trees, which are esteemed the best in Europe.

The second town is Ribeira Grande, situated on the North-side of the island, containing about as many inhabitants as the city; a large convent of Franciscan friars, and one of nuns. It gives title to a count, called the Conde Ribeira Grande, who first instituted linen and woollen manufactories in the island.

The third town is Villa Franca, on the South-side of the island, about six leagues East of Ponta del Guda. It has a convent of Franciscan friars, and one of nuns, which contains about three hundred. Here, about half a mile from the shore, lies a small island (Ilhao) which is hollow in the middle, and contains a fine basin with only one entrance into it, fit to hold fifty sail of vessels

secure from all weather; at present it wants cleaning out, as the winter's rain washes down great quantities of earth into it, which has greatly diminished its depth. But vessels frequently anchor between this island and the main.

Beside these towns are several smaller, *viz.* Alagoa, Agoa de Pao, Brelanha, Fanaes de Ajuda, and a number of hamlets, called Lugars, or Places.

About four leagues North-east from Villa Franca lies a place called the Furnas, being a round deep valley in the middle of the East part of the island, surrounded with high mountains, which, though steep, may be easily ascended on horseback by two roads. The valley is about five or six leagues in circuit, the face of the mountains, which are very steep, is intirely covered with beautiful ever-greens, *viz.* myrtles, laurels, a large species of bilberry, called *uva de ferra*^(a), &c. and numberless rivulets of the purest water run down their sides. The valley below is well cultivated, producing wheat, Indian corn, flax, &c. The fields are planted round with a beautiful sort of poplars, which grow into pyramidal forms, and by their careless, irregular disposition, together with the multitude of rivulets, which run in all directions through the valley, a number of boiling fountains, throwing up

(a) Mountain grapes.

clouds of steam, a fine lake in the South-west part about two leagues round, compose a prospect the finest that can be imagined. In the bottom of the valley the roads are smooth and easy, there being no rocks but a fine pulverized pumice stone that the earth is composed of.

There are a number of hot fountains in different parts of the valley, and also on the sides of the mountains: but the most remarkable is that called the Caldeira, situated in the Eastern part of the valley, on a small eminence by the side of a river, on which is a basin about thirty feet diameter, where the water continually boils with prodigious fury. A few yards distant from it is a cavern in the side of the bank, in which the water boils in a dreadful manner, throwing out a thick, muddy, unctuous water several yards from its mouth with a hideous noise. In the middle of the river are several places where the water boils up so hot, that a person cannot dip his finger into it without being scalded; also along its banks are several apertures, out of which the steam rises to a considerable height so hot that there is no approaching it with one's hand: in other places, a person would think, that a hundred smiths bellows were blowing altogether, and sulphureous steams issuing out in thousands of places, so that native sulphur is found in every chink, and the ground covered with it
like

like hoar frost; even the bushes that happen to lay near these places are covered with pure brimstone, condensing from the steam that issues out of the ground, which in many places is covered over with a substance like burnt allum. In these small caverns, where the steam issues out, the people often boil their yams (*inhames*).

Near these boiling fountains are several mineral springs; two, in particular, whose waters have a very strong mineral quality, of an acid taste and bitter to the tongue.

About half a mile to the Westward, and close by the river side, are several hot springs, which are used by sick people with great success. Also on the side of a hill, West of St. Ann's church, are many others, with three bathing houses, which are most commonly used. These waters are very warm, although not boiling hot; but at the same place issue several streams of cold mineral water, by which they are tempered, according to every one's liking.

About a mile South of this place, and over a low ridge of hills, lies a fine lake about two leagues in circumference, and very deep, the water thick, and of a greenish colour. At the North-end is a plain piece of ground, where the sulphureous steams issue out in many places, attended with a surprizing blowing noise. I could observe

ferve strong springs in the lake, but could not determine whether they were hot or cold: this lake seems to have no visible evacuation. The other springs immediately form a considerable river, called Ribeira Quente^(b), which runs a course about two or three leagues, through a deep rent in the mountains, on each side of which are several places where the smok issues out. It discharges itself into the sea on the South side, near which are some places where the water boils up at some distance in the sea.

This wonderful place had been taken little notice of, until very lately; so little curiosity had the gentlemen of the island, that scarcely any of them had seen it, until of late some persons afflicted with very virulent disorders, were persuaded to try its waters, and found immediate relief from them. Since that time it has become more and more frequented; several persons who had lost the use of their limbs by the dead palsy have been cured; and also others who were troubled with eruptions on their bodies.

A clergyman, who was greatly afflicted with the gout, tried the said waters, and was in a short time perfectly cured, and has had no return of it since. When I was there, several old gentlemen, who were quite worn out

(b) Hot river.

with the said disorder, were using the waters, and had received incredible benefit from them; in particular, an old gentleman, about sixty years of age, who had been tormented with that disorder more than twenty years, and often confined to his bed for six months together: he had used these waters about three weeks, had quite recovered the use of his limbs, and walked about in the greatest spirits imaginable. A friar also who had been troubled with the said disorder about twelve years, and reduced to a cripple, by using them a short time was quite well, and went a hunting every day. There are many other instances of the efficacy of these waters, which, for the sake of brevity, I must here omit.

There are several other hot springs in the island, particularly at Ribeira Grande; but they do not possess the same virtues, at least not in so great a degree.

The East and West part of the island rises into high mountains; but the middle is low, interspersed with round conic hills, all of which have very recent marks of fire; all the parts below the surface consisting of melted lava laying very hollow.

Most of the mountains to the Westward have their tops hollowed out like a punch-bowl, and contain water. Near the West end is an immense deep valley, like the
Furnas,

Furnas, called the Sete Cidades^(d). This valley is surrounded with very abrupt mountains, about seven or eight leagues round; in the bottom is a deep lake of water, about three leagues in circuit, furnished with great number of water fowls. This water has no mineral quality; neither are there any hot springs in the valley. All these mountains are composed of a white crumbly pumice stone, which is so loose, that, if a person thrust a stick into the banks, whole waggon loads of it will tumble down. The inhabitants of the island relate a story, that he who first discovered it observed an extraordinary high peak near the West-end; but the second time he visited it no such peak was to be seen, which he supposed must have certainly sunk; but, however improbable this story may be, at some period or another it must have certainly been the case.

If you should think the account of the mineral waters of any service to the public, they are very welcome to it; and, should any person venture so far for his health, a small stock of the superfluities of life only need to be laid in, as the island yields every necessary. The climate is very temperate: the thermometer since I have been here has been no higher than 77°, commonly from 70° to 75°.

(c) Seven Cities.

I have sent you twelve or thirteen bottles as a specimen, which are as follows:

N° 1. From a cold fountain giving a strong acid water, lying South-east from the boiling Caldeira.

N° 2. From a strong cold mineral fountain, about twenty yards nearer the Caldeira.

N° 3. From a cold mineral spring in the valley of Foze de Pont.

N° 4. A hot mineral water, from the bathing place near the river.

N° 5. A hot mineral water, from the upper bathing place.

N° 6. From the great Caldeira.

N° 7. From a thick boiling fountain near the Caldeira.

Also earth from all these fountains, with their corresponding numbers.

